Lester G. Rodriguez Santos

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EDUCATION

PhD Student, Interdepartmental Neuroscience Program (INP) **August 2022 - Present**
Yale School of Medicine (YSM) – New Haven, CT

Bachelor of Science, Molecular and Cellular Biology **August 2016 - May 2020**
University of Puerto Rico, Rio Piedras Campus (UPR-RP) – San Juan, PR
Honors: Summa Cum Laude

SPECIALIZED TRAINING & WORKSHOPS

Pharmacokinetics Course – NeuroReceptor Mapping **May 2024**
The Neuro. Montreal Neurological Institute
Instructors: Dr. Olivier Barret, Dr. Ronald Boellaard, Dr. Rich Carson, Dr. Sandeep Golla, Dr. Bob Innis, Dr. Mark Lubberink. Dr. Gitte Moos-Knudsen, Dr. Marc Normandin, Dr. Julie Price and Dr. Mark Slifstein

Training Summary:
- Learned about the tools and software used to analyze neuroimaging data in a 3-day intensive course.
- Practiced data analysis techniques with a mock dataset using MATLAB and SPM12.

Neurohackademy **August 2023**
University of Washington eScience Institute
Instructors: Dr. Ariel Rokem and Dr. Noah Benson

Training Summary:
- Received broad instruction on different neuroimaging and data science topics during a 2-week long intensive bootcamp led by instructors from many different academic institutions.
- Completed a collaborative group project applying graph theory to study the relationship between the rs-fMRI connectivity of brain networks and their metabolic demands using FDG PET.

fMRI Image Acquisition and Analyses Course **June 2021**
Center for Translational Research in Neuroimaging and Data Science
Instructors: Dr. Vince Calhoun, Dr. Kent Khiel and Dr. Tor Wager

Training Summary:
- Learned about the tools and software used to analyze neuroimaging data in a 3-day intensive course.
- Practiced data analysis techniques with a mock dataset using MATLAB and SPM12.

RESEARCH EXPERIENCE

PhD Student Researcher **August 2022 – Present**
Department of Psychiatry, Yale School of Medicine – New Haven, CT
Supervisors: Dr. Kelly Cosgrove (kelly.cosgrove@yale.edu) and Dr. Sarah Yip (sarah.yip@yale.edu)

- Interested in combining different neuroimaging modalities, primarily fMRI and PET, to study the acute effects of drugs on the brain and the underpinnings of substance use disorders (SUDs).
- Using connectome-based predictive modelling (CPM) to predict subjective effects of methamphetamine with functional connectivity.

– Applying machine learning algorithms to separate sources for [^{11}C]PHNO binding in smokers and non-smokers during an amphetamine challenge with PET.

NIDA Postbaccalaureate Fellow **July 2020 – July 2022**
National Institute on Drug Abuse, National Institutes of Health – Baltimore, MD
Supervisor: Dr. Elliot Stein (estein@intra.nida.nih.gov)

– Worked on clinical protocols studying SUDs with multimodal imaging technologies.
– Received training on clinical procedures and data analysis.
– Conducted an independent research project to study changes in the occurrence of distinct brain states after nicotine smokers transitioned into acute abstinence.

Undergraduate Research Assistant **August 2018 – May 2020**
Biology Department, Rio Piedras Campus of University of Puerto Rico – San Juan, PR
Supervisor: Dr. Carmen Maldonado (carmen.maldonado7@upr.edu)

– Worked in a preclinical laboratory using rodents to study the neurobiology of anxiety-like behaviors.
– Received training on pharmacological manipulations, biochemical assays, and behavioral paradigms.
– Developed an independent research project to assess the potential anxiolytic effects of a cannabinoid antagonist and its interactions with the oxytocinergic system.

NIDA Summer Research Intern **June 2019 – July 2019**
Center for Studies of Addiction, University of Pennsylvania – Philadelphia, PA
Supervisor: Dr. Anna Rose Childress (childress@pennmedicine.upenn.edu)

– Interned at a clinical laboratory studying relapse vulnerability in patients with cocaine use disorder (CUD).
– Received training on clinical procedures, patient interactions, and data analysis.
– Completed a summer research project analyzing data from a fMRI aversive cue-reactivity task in participants with CUD and related regional activation estimates to relapse metrics.

TEACHING EXPERIENCE

Teaching Fellow, Principles of Neuroscience (INP 710) **August 2024 – December 2024**
Interdepartmental Neuroscience Program, Yale University – New Haven, CT
Supervisors: Dr. William Cafferty (william.cafferty@yale.edu) and Dr. Angeliki Louvi (angeliki.louvi@yale.edu)

- Facilitate weekly discussions on recent publications in the field of neuroscience.
- Grade weekly essay submission to help students improve their writing skills.

Instructor, Innovations in Science and Technology (IST) Track **June 2023 – July 2023**
Yale Young Global Scholars (YYGS), Yale University – New Haven, CT **June 2024 – July 2024**
Supervisor: Durel Crosby (durel.crosby@yale.edu)

- Developed and taught seminars on neuroscience-related topics to high school students.
- Supervised CAPSTONE projects in the field of biology, neuroscience and psychology.
- Facilitated discussion sessions on daily science lectures presented by Yale faculty.

WORK EXPERIENCE

GSAS Professional Experience Fellow **August 2023 – Present**
Office of New Haven Affairs, Yale University – New Haven, CT
Supervisors: Dr. Maria Parente (maria.parente@yale.edu) and Dr. Rick Crouse (richard.crouse@yale.edu)

- Providing support to scientific outreach programs at Yale for K-12 students from the New Haven area.
- Position also involves researching and developing new programming initiatives within STEM.
- Data analysis to discover gaps in programming or student recruitment.

GSAS Professional Experience Fellow **January 2023 – May 2023**
Program to Advance Training in Health & Sciences, Yale University – New Haven, CT
Supervisor: Dr. Giovanna Guerrero-Medina (giovanna.guerrero-medina@yale.edu)

- Organized professional development programming for undergraduate students from underrepresented backgrounds in science and medicine.
- Developed a proposal for a novel group-based peer-mentoring initiative between current students and alumni to facilitate mentorship in an informal and relaxed environment.

FELLOWSHIPS/AWARDS/HONORS

Graduate Research Fellowship (GRFP) **April 2024 - Present**
The National Science Foundation (NSF)

Wu Tsai Institute (WTI) Graduate Fellow **August 2022 - Present**
Wu Tsai Institute, Yale University

Class of 2020: Award for Undergraduate Research in Biology **May 2020**
Department of Biology, UPR-RP

Class of 2020: Research and Creativity Award from the College of Natural Sciences **May 2020**
College of Natural Sciences, UPR-RP

College of Natural Sciences Dean's Honor List **August 2016 – May 2020**
College of Natural Sciences, UPR-RP

LEADERSHIP EXPERIENCE

Director, Open Labs at Yale **December 2024 – Present**

- Leading a team of graduate students to organize outreach initiatives for K-12 students in New Haven.

Outreach Committee Co-Chair, WTI Student and Postdoc Committee **August 2024 – Present**

- Developing outreach initiatives to teach students about neuroscience and cognition.

Science Cafe Co-Chair, Open Labs at Yale **January 2022 – December 2024**

- Organized monthly virtual science seminars and a biannual science fair for New Haven families.

Seminar Series Subcommittee Co-Chair, NIH Postbac Committee **June 2021 – June 2022**

- Organized the monthly postbaccalaureate seminar series and yearly postbaccalaureate elevator pitch talks.

Outreach Coordinator, National Neuroscience Student Association UPR-RP **Augusts 2019 – May 2020**

- Developed seminars and activities on neuroscience for K-12 students in Puerto Rico.

OUTREACH/MENTORSHIP

Member, INP Outreach Program **August 2023 – Present**

Mentor, Program to Advance Training in Health Sciences (PATHS) **August 2023 – December 2023**

Mentor, Científico Latino's Graduate School Mentorship Initiative Program **August 2023 – December 2023**

Mentor, YBDIC Next-Generation Excellence Initiative Mentoring Program **January 2022 – May 2023**

Volunteer, Educando con Amor / Ciencia en Español **April 2021 – June 2022**

INVITED TALKS/PANELS

Panelist, Graduate Student Panel **April 2025**
Neurobridges: Connecting Brains and Boricuas, Irvine CA
Contact: Gimarie Irizarry Martinez (girizarr@uci.edu)

Guest Speaker, Behavioral Neuroscience Program **April 2023**
Quinnipiac University, Hamden CT
Contact: Dr. Todd Ahern (todd.ahern@quinnipiac.edu)

Panelist, NIDA Summer Research Internship Career Q&A **August 2021**
National Institute on Drug Abuse, Bethesda MD
Contact: Dr. Albert Avila (albert.avila@nih.gov)

POSTER PRESENTATIONS

Lester Rodriguez Santos, Hanna Molla, Marzieh Babaeianjelodar, Kelly Cosgrove, Harriet de Wit, Sarah Yip. (2024). *Connectome-Based Encoding of Subjective but Not Physiological Effects of Methamphetamine*. 63rd Annual Meeting of the American College of Neuropsychopharmacology, Phoenix, AZ.

Lester G. Rodriguez, Ansel T. Hillmer, Katina C. Calakos, Sarah W. Yip, Kelly P. Cosgrove. (2024). *Data-Driven Independent Component Analysis To Isolate Dopamine Receptor Subtype-Specific Binding Sources of [11C]-(+)-PHNO During An Amphetamine Challenge Study of Tobacco Smokers and Nonsmokers*. NeuroReceptor Mapping (NRM) 2024, Montreal, QC, Canada.

L. G. Rodriguez, j. R. Fedota, t. J. Ross, b. J. Salmeron, h. U. Deshpande, e. A. Stein. (2022). *Relationship between affective and behavioral composite factors and dynamic resting-state functional connectivity in sated and acutely abstinent smokers*. Neuroscience (SfN) 2022, San Diego, CA.

Rodríguez L, Childress AR, Regier P, Suh JJ, Jagannathan K, Young K, Darnley S, Taylor M. (2019) *Brain response of cocaine patients to aversive cues in fMRI correlates with drug use outcomes*. 27th Annual Puerto Rico Neuroscience Conference, Bayamón, PR.

Rodríguez L, Muñoz P, Ramos A, Encarnación V, Olmedo E, González F, Norzé W, Maldonado-Vlaar CS. *Effects of chronic and acute inhibition of cannabinoid CB2 receptor on anxiety levels and oxytocin activity*. Neuroscience (SfN) 2019, Chicago, IL.

PUBLICATIONS

Rodriguez-Santos, L., Molla, H., Babaeianjelodar, M., Cosgrove, K., de Wit, H., & Yip, S. W. *Connectome-Based Encoding of Subjective but Not Physiological Effects of Methamphetamine*. In preparation.